

What is claimed is:

1. A seat occupant sensor for a vehicle comprising:

an upper member having a first and a second end, said upper  
5 member being secured at the first end thereof to a seat installed  
within a vehicle, said upper member experiencing movement upon  
application of a physical load to the first end which arises from a  
vehicle passenger on the seat;

a lower member having a first and a second end, said lower  
10 member being secured at the first end thereof to a body of the  
vehicle;

a sensing member having a length with a first end and a  
second end opposite the first end, said sensing member being joined  
at the first end thereof to the second end of said upper member and  
15 at the second end thereof to the second end of said lower member so  
as to permit said sensing member to undergo bending stress as a  
function of a degree of the physical load on said upper member in  
response to the movement of said upper member transmitted to the  
first end of said sensing member from the second end of said upper  
20 member, thereby sensing the vehicle passenger on the seat; and

a stopper mechanism installed on one of said upper member  
and said lower member, said stopper mechanism working to stop  
said sensing member from bending out of a predetermined range in  
which said sensing member is allowed to undergo a maximum  
25 bending stress within a bending stress limit of said sensing member.

2. A seat occupant sensor as set forth in claim 1, wherein said stopper mechanism is disposed at a location which is determined as a function of a difference between an upper limit of a displacement of said sensing member when subjected to a maximum permissible bending stress below the bending stress limit and a lower limit of a displacement of said sensing member when subjected to a minimum load within a desired load measurement range of said sensing member.
3. A seat occupant sensor as set forth in claim 2, wherein said sensing member has a portion serving as a spring which has a length  $L$ , and wherein the location of said stopper mechanism is at a distance of one of  $2L/3$  or more and  $L/3$  or less from an end of the spring on a side of the first end of the sensing member according to a location where the physical load is applied to said sensing member.
4. A seat occupant sensor as set forth in claim 1, wherein said stopper mechanism is made up of a stopper hole and a stopper pin, the stopper hole being formed in one of said upper member and said lower member, the stopper pin being installed at one end thereof on the other of said upper member and said lower member and disposed at the other end thereof within the stopper hole to be movable within a clearance between an outer wall of the stopper pin and an inner wall of the stopper hole.
5. A seat occupant sensor as set forth in claim 1, wherein said

upper member is disposed in parallel to said sensing member.

6. A seat occupant sensor as set forth in claim 1, wherein said sensing member has a rectangular cross section.

5

7. A seat occupant sensor as set forth in claim 1, wherein said sensing member has a strain gauge which outputs a signal as a function of the bending stress acting on said sensing member.